

It is also contemplated within the scope of the invention that the various hydraulic actuators employed in the packer assembly of the invention could be replaced by pneumatic actuators, motorized drives or other mechanical actuators for moving the packing panel within the hopper. Similarly, it is contemplated within the scope of the invention that the various pneumatic actuators employed in the invention could be replaced by hydraulic actuators, spring loaded pins or other mechanical actuators for engaging pins with corresponding holes.

Although this description contains many specifics, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments thereof, as well as the best mode contemplated by the inventors of carrying out the invention. The invention, as described herein, is susceptible to various modifications and adaptations, as would be understood by those having ordinary skill in the art to which the invention relates, and the same are intended to be comprehended within the meaning and range of equivalents of the appended claims.

What is claimed is:

1. A refuse collection vehicle comprising:
  - (a) a chassis;
  - (b) a storage container that is detachably mounted on the chassis, said storage container having a rear wall with an opening therein and a sweep panel that is pivotally mounted in the rear wall, said sweep panel being movable between an open position which exposes the opening in the rear wall of the container and a closed position which covers the opening in the rear wall of the container;
  - (c) a rear tailgate assembly that is pivotally mounted to the chassis, said tailgate assembly having a hopper which is adapted to receive refuse and a packer assembly which is adapted to move refuse from the hopper of the tailgate assembly to the opening in the rear wall of the storage container when the sweep panel of the storage container is in the open position;wherein the sweep panel and the tailgate assembly are arranged and configured so as to minimize the spilling of refuse from the opening of the storage container into the hopper as the sweep panel is moved from the open position to the closed position.
2. The refuse collection vehicle of claim 1 which includes an actuator for moving the sweep panel between the open position and the closed position.
3. The refuse collection vehicle of claim 1 wherein the tailgate assembly includes a locking mechanism for attaching the tailgate assembly to the container.

4. The refuse collection vehicle of claim 1 wherein the container includes a dam in the rear wall below the sweep panel.
5. The refuse collection vehicle of claim 1 wherein:
  - (a) the hopper of the tailgate assembly includes a hopper floor;
  - (b) the packer assembly includes a packer having a packer panel, which packer is adapted to move across the hopper floor to move refuse to the opening in the rear wall of the storage container when the sweep panel is in the open position;
  - (c) the sweep panel has a lower end;
  - (d) the sweep panel and packer assembly are arranged and configured so that movement of the sweep panel from the open to the closed position after the packer has moved refuse to the opening in the rear wall of the storage container will move the lower end of the sweep panel across the packer panel to sweep refuse into the container.
6. The refuse collection vehicle of claim 1 wherein an actuator is attached between the chassis and the tailgate assembly, which actuator is adapted to pivot the tailgate assembly to permit the container to be removed from the vehicle.
7. The refuse collection vehicle of claim 6 wherein the actuator that is attached between the chassis and the tailgate assembly is also adapted to pivot the tailgate assembly forward when the container is removed.

8. The refuse collection vehicle of claim 6 wherein:
  - (a) the tailgate assembly includes a roller that is adapted to support the tailgate assembly when the tailgate assembly is pivoted rearwardly; and
  - (b) the actuator that is attached between the chassis and the tailgate assembly is also adapted to pivot the tailgate assembly rearward when the container is removed, so that the tailgate assembly may be supported by the roller.
9. The refuse collection vehicle of claim 1 wherein the storage container includes a pair of container sidewalls, a top wall, a bottom wall and a front wall, in addition to the rear wall.
10. The refuse collection vehicle of claim 9 wherein the front wall of the storage container is hinged at the top.
11. The refuse collection vehicle of claim 1 wherein the chassis includes a cross-member for supporting the container.
12. The refuse collection vehicle of claim 11 wherein:
  - (a) the cross-member includes a lock at each end thereof; and
  - (b) the container includes a pair of corner castings that are adapted to receive the locks on the cross-members to secure the container on the chassis.

13. A refuse collection vehicle comprising:

- (a) a chassis;
- (b) a storage container that is detachably mounted on the chassis, said storage container having a rear wall with an opening therein and a sweep panel that is pivotally mounted in the rear wall, said sweep panel being movable between an open position which exposes the opening in the rear wall of the container and a closed position which covers the opening in the rear wall of the container;
- (c) a rear tailgate assembly that is pivotally mounted to the chassis, said tailgate assembly comprising:
  - (i) an actuator for moving the sweep panel between the open position and the closed position;
  - (ii) a hopper which is adapted to receive refuse, said hopper being defined by a pair of tailgate sidewalls with a front plate and a hopper floor extending between the sidewalls, with each of said sidewalls having a curved slot extending therethrough;
  - (iii) a packer assembly which comprises:
    - (a) a packer comprised of a packer panel and a plurality of packer end plates, with each of said packer end plates having a front end and a rear end;
    - (b) a first pair of actuators, each of which has a base end and an extension end, wherein the base end of each of said first pair of actuators is pivotally attached to the inside of a tailgate sidewall,

and wherein the extension end of each of said first pair of actuators is pivotally attached to the rear end of a packer end plate;

- (c) a second pair of actuators, each of which has a base end and an extension end, wherein the base end of each of said second pair of actuators is pivotally attached to the outside of a tailgate sidewall;
- (d) a pair of links, each of which has a first end and a second end, wherein each link is pivotally attached at its first end adjacent to the front plate and each link is pivotally attached at its second end to the extension end of one of the second pair of actuators;
- (e) a pair of link pins, each of which extends through the packer end plate at an intermediate position, connects the second end of a link to the extension end of one of the second pair of actuators and extends through the curved slot in an adjacent sidewall;

wherein the packer assembly is adapted to move refuse from the hopper of the tailgate assembly to the opening in the rear wall of the storage container when the sweep panel of the storage container is in the open position.

- 14. The refuse collection vehicle of claim 13 wherein the container includes a dam in the rear wall below the sweep panel.
- 15. The refuse collection vehicle of claim 13 which includes a pair of exterior enclosures, each of which is located outside a sidewall of the hopper, and each of which encloses one of the pair of links and one of the pair of second actuators.

16. The refuse collection vehicle of claim 13 wherein the tailgate assembly includes a fixed deflector plate that is located in front of the second pair of actuators.
17. The refuse collection vehicle of claim 16 which includes:
  - (a) a bracket that is mounted on the fixed deflector plate; and
  - (b) an actuator, one end of which is connected to the bracket and the other end of which is connected to the sweep panel, which actuator is adapted to move the sweep panel between the closed position and the open position.
18. The refuse collection vehicle of claim 13 wherein the chassis includes a cross-member for supporting the container.
19. The refuse collection vehicle of claim 18 wherein:
  - (a) the cross-member includes a lock at each end thereof; and
  - (b) the container includes a pair of corner castings that are adapted to receive the locks on the cross-members to secure the container on the chassis.